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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,930	09/07/2006	Michael Vernon Spencer	63669A	4599

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The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
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EXAMINER	
NIEBAUER, RONALD T	
ART UNIT	**PAPER NUMBER**
1654	
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01/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,930	SPENCER, MICHAEL VERNON	
	Examiner	Art Unit	
	Ronald T. Niebauer	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-12 and 14-16* is/are pending in the application.

4a) Of the above claim(s) *10-12 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/7/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group 2 (claims 1-8,14-15) in the reply filed on 11/29/07 is acknowledged.

Claims 10-12,16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/29/07.

Claim 9 and 13 have been cancelled.

Claims 1-8,14-15 are under consideration.

Specification

The disclosure is objected to because of the following informalities:

The use of trademarks (page 5 line 18 for example) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8,14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz (US 6,261,218), Keary (US 6,294,008), Pyle (US 2,711,965), and Savage (US 3,728,331).

Schulz (US 6,261,218) teach a process for making a cellulose ether (abstract). In particular, ethylcellulose (column 6 line 38) is a cellulose ether of the invention. Schulz teach depolymerization of the cellulose ether specifically via the gaseous acid hydrogen chloride (claim 9) (compare claim 1,3 of the current invention). Schulz teach the process in the presence of water, specifically at least 0.5 weight percent and no more than 5.0 weight percent (claims 2,4) (compare claim 4 of the current invention). Schulz teach that a low molecular weight cellulose ether is formed such that a two percent aqueous solution has a viscosity preferably about 1 to about 100 cP at 20C (1cP = 1mPa•s) (column 4 line 32-37). Schulz teach the process including etherification of the alkalized cellulose and depolymerization (abstract). Specifically, Schulz teach an etherification reaction with ethyl chloride (column 3 lines 44-50) and depolymerization with gaseous hydrogen halide (column 4 lines 51-57) (compare claim 8 of the current invention).

Schulz does not expressly teach the ethoxyl content or viscosity of the starting material of claim 1 and 8; the packaging as in claim 6,14 and 15; the HCl weight percent as in claim 5; or the presence of an organic solvent with the ethyl chloride as in claim 8.

It would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g.ethoxyl content, viscosity, HCl weight percent), because such conditions are art-recognized result-effective variables that are routinely determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). *See* MPEP § 2145.05).

In the instant case, the prior art teaches related processes within the range of the instant invention.

Keary (US 6,294,008) teach cellulose ether compositions having low molecular weight and processes of making (abstract). Keary specifically teach the depolymerization of cellulose ether (column 1 line 61-65, claim 10) such that the viscosity is 200 cP or less by using hydrogen chloride. Keary specifically teach that the hydrogen chloride be present at 0.10 to about 0.19 weight percent (claim 20). Therefore Keary teach a similar process with specific hydrogen chloride ranges as in the instant invention (compare claim 5).

It is noted that Keary (column 2 line 44-47) and Schulz (column 2 line 22-24) test viscosity of 2% solution which is different than the conditions of the composition of the claimed

invention (a 5% solution). Please note, since the Office does not have the facilities for examining and comparing Applicants' composition with the composition of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. *See In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980), and "as a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Pyle (US 2,711,965) teach the treatment of cellulose ethers (first paragraph). Pyle specifically describe cellulose ethers that are organic solvent-soluble in common organic solvents (column 4 line 14-18). Pyle goes on to describe an ethycellulose having an ethoxyl content preferably between about 43% and about 48% and a viscosity of at least 20cps (column 4 lines 24-27). In example 1, Pyle teach ethylcellulose having 46.5% ethoxyl content dissolved in a toluene-alcohol organic solvent which has a viscosity of 97 cps. Therefore Pyle teach a similar process with specific ethoxyl content and viscosity of the starting material as in the current invention (compare claim 1,8) as well as the presence of organic solvents as in the current invention (compare claim 8a).

Savage (US 3,728,331) teach a process for reducing the viscosity of a cellulose ether (abstract). Savage specifically teaches the process for ethyl cellulose (column 2 line 19) and teaches depolymerization (column 2 line 49). Savage teach the addition of hydrogen peroxide followed by packaging (column 3 line 66-68) with no intermediate neutralization step.

Since Schulz (discussed above) teach a related process for reducing viscosity one would be motivated to combine with the teachings of Savage. In particular, one would be motivated to optimize the process to reduce the cost of the process by reducing the number of steps and materials needed. As such one would package the ethylcellulose without a neutralization step as described by Savage thus meeting the limitations of claims 6,14-15 of the instant invention. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

It has been recently held that "Neither §103's enactment nor *Graham*'s analysis disturbed the Court's earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art." KSR v. Teleflex, 550 U.S. ___, 82 USPQ2d 1385, 1389 (2007). The KSR court stated that "a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR at 1389. In the instant case, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods and the combination would have yielded predictable results.

Furthermore, The KSR court concluded that "obvious to try" may be an appropriate test under 103. The Supreme Court stated in *KSR*

> When there is motivation
>
> > "to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, ___, 82 USPQ2d 1385, 1397 (2007).

In the instant case all the claimed elements (ethylcellulose and packaging of ethylcellulose) were known in the art as discussed above and one skilled in the art could have combined the elements by known methods and the combination would have yielded predictable results. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Section 2111.04 of the MPEP states:

> Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:
> (A) " adapted to " or "adapted for " clauses;
> (B) " wherein " clauses; and
> (C) " whereby " clauses.
> The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case.

In the instant case, claims 2 and 7 recite wherein clauses about the product produced. It is noted that claim 7 also recites limitations about the starting material, however the range of viscosities is within the ranges cited above. Since the wherein clause does not result in an additional step or require steps to be performed the claim limitations are met from the above cited references.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8,14-15 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,306,333 ('333) in view of Schulz (US 6,261,218), Keary (US 6,294,008), Pyle (US 2,711,965), and Savage (US 3,728,331).

'333 teach a process for making cellulose specifically a low molecular weight cellulose ether comprising providing a cellulose ether of 200 cP or more in a two percent aqueous solution and contacting the cellulose ether with an acid to depolymerize to cellulose (claim 1).

'333 does not expressly teach ethylcellulose, hydrogen chloride, etherifying .or specific ethoxyl contents.

One would have been motivated to combine '333 with the work of Schulz since both teach the making of cellulose ethers. Schulz (US 6,261,218) teach a process for making a

cellulose ether (abstract). In particular, ethylcellulose (column 6 line 38) is a cellulose ether of the invention. Schulz teach depolymerization of the cellulose ether specifically via the gaseous acid hydrogen chloride (claim 9) (compare claim 1,3 of the current invention). Schulz teach the process in the presence of water, specifically at least 0.5 weight percent and no more than 5.0 weight percent (claims 2,4) (compare claim 4 of the current invention). Schulz teach that a low molecular weight cellulose ether is formed such that a two percent aqueous solution has a viscosity preferably about 1 to about 100 cP at 20C (1cP = 1mPa•s) (column 4 line 32-37). Schulz teach the process including etherification of the alkalized cellulose and depolymerization (abstract). Specifically, Schulz teach an etherification reaction with ethyl chloride (column 3 lines 44-50) and depolymerization with gaseous hydrogen halide (column 4 lines 51-57) (compare claim 8 of the current invention).

It would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g.ethoxyl content, viscosity, HCl weight percent), because such conditions are art-recognized result-effective variables that are routinely determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). *See* MPEP § 2145.05).

In the instant case, the prior art teaches related processes within the range of the instant invention.

Keary (US 6,294,008) teach cellulose ether compositions having low molecular weight and processes of making (abstract). Keary specifically teach the depolymerization of cellulose

ether (column 1 line 61-65, claim 10) such that the viscosity is 200 cP or less by using hydrogen chloride. Keary specifically teach that the hydrogen chloride be present at 0.10 to about 0.19 weight percent (claim 20). Therefore Keary teach a similar process with specific hydrogen chloride ranges as in the instant invention (compare claim 5).

It is noted that Keary (column 2 line 44-47) and Schulz (column 2 line 22-24) test viscosity of 2% solution which is different than the conditions of the composition of the claimed invention (a 5% solution). Please note, since the Office does not have the facilities for examining and comparing Applicants' composition with the composition of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. *See In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980), and "as a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Pyle (US 2,711,965) teach the treatment of cellulose ethers (first paragraph). Pyle specifically describe cellulose ethers that are organic solvent-soluble in common organic solvents (column 4 line 14-18). Pyle goes on to describe an ethycellulose having an ethoxyl content preferably between about 43% and about 48% and a viscosity of at least 20cps (column 4 lines 24-27). In example 1, Pyle teach ethylcellulose having 46.5% ethoxyl content dissolved in a toluene-alcohol organic solvent which has a viscosity of 97 cps. Therefore Pyle teach a similar process with specific ethoxyl content and viscosity of the starting material as in the current

invention (compare claim 1,8) as well as the presence of organic solvents as in the current invention (compare claim 8a).

Savage (US 3,728,331) teach a process for reducing the viscosity of a cellulose ether (abstract). Savage specifically teaches the process for ethyl cellulose (column 2 line 19) and teaches depolymerization (column 2 line 49). Savage teach the addition of hydrogen peroxide followed by packaging (column 3 line 66-68) with no intermediate neutralization step. Since Schulz (discussed above) teach a related process for reducing viscosity one would be motivated to combine with the teachings of Savage. In particular, one would be motivated to optimize the process to reduce the cost of the process by reducing the number of steps and materials needed. As such one would package the ethylcellulose without a neutralization step as described by Savage thus meeting the limitations of claims 6,14-15 of the instant invention. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

It has been recently held that "Neither §103's enactment nor *Graham*'s analysis disturbed the Court's earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art." KSR v. Teleflex, 550 U.S. ___, 82 USPQ2d 1385, 1389 (2007). The KSR court stated that "a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR at 1389. In the instant case, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods and the combination would have yielded predictable results.

Furthermore, The KSR court concluded that "obvious to try" may be an appropriate test

under 103. The Supreme Court stated in *KSR*

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In the instant case all the claimed elements (ethylcellulose and packaging of ethylcellulose) were known in the art as discussed above and one skilled in the art could have combined the elements by known methods and the combination would have yielded predictable results. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

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> (A) " adapted to " or "adapted for " clauses;
> (B) " wherein " clauses; and
> (C) " whereby " clauses.
> The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case.

In the instant case, claims 2 and 7 recite wherein clauses about the product produced. It is noted that claim 7 also recites limitations about the starting material, however the range of viscosities is within the ranges cited above. Since the wherein clause does not result in an

additional step or require steps to be performed the claim limitations are met from the above cited references.

Claims 1-8,14-15 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,261,218 ('218) in view of Schulz (US 6,261,218), Keary (US 6,294,008), Pyle (US 2,711,965), and Savage (US 3,728,331).

'218 teach a process of depolymerizing a high molecular weight cellulose ether comprising contacting with a gaseous acid (claim 1). '218 teach a water content of at least 0.5 weight percent (claim 2). '218 teach hydrogen chloride as the acid (claim 7).

'218 does not expressly teach the ethoxyl content and viscosity of the starting material of claim 1, packaging as in claim 6, HCl weight percent as in claim 5, or the presence of an organic solvent with the ethyl chloride as in claim 8.

One would have been motivated to combine '218 with the work of Schulz since both teach the making of cellulose ethers. Schulz (US 6,261,218) teach a process for making a cellulose ether (abstract). In particular, ethylcellulose (column 6 line 38) is a cellulose ether of the invention. Schulz teach depolymerization of the cellulose ether specifically via the gaseous acid hydrogen chloride (claim 9) (compare claim 1,3 of the current invention). Schulz teach the process in the presence of water, specifically at least 0.5 weight percent and no more than 5.0 weight percent (claims 2,4) (compare claim 4 of the current invention). Schulz teach that a low molecular weight cellulose ether is formed such that a two percent aqueous solution has a viscosity preferably about 1 to about 100 cP at 20C (1cP = 1mPa•s) (column 4 line 32-37).

Schulz teach the process including etherification of the alkalized cellulose and depolymerization (abstract). Specifically, Schulz teach an etherification reaction with ethyl chloride (column 3 lines 44-50) and depolymerization with gaseous hydrogen halide (column 4 lines 51-57) (compare claim 8 of the current invention).

It would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g.ethoxyl content, viscosity, HCl weight percent), because such conditions are art-recognized result-effective variables that are routinely determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). *See* MPEP § 2145.05).

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It is noted that Keary (column 2 line 44-47) and Schulz (column 2 line 22-24) test viscosity of 2% solution which is different than the conditions of the composition of the claimed invention (a 5% solution). Please note, since the Office does not have the facilities for examining

and comparing Applicants' composition with the composition of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. *See In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980), and "as a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Pyle (US 2,711,965) teach the treatment of cellulose ethers (first paragraph). Pyle specifically describe cellulose ethers that are organic solvent-soluble in common organic solvents (column 4 line 14-18). Pyle goes on to describe an ethycellulose having an ethoxyl content preferably between about 43% and about 48% and a viscosity of at least 20cps (column 4 lines 24-27). In example 1, Pyle teach ethylcellulose having 46.5% ethoxyl content dissolved in a toluene-alcohol organic solvent which has a viscosity of 97 cps. Therefore Pyle teach a similar process with specific ethoxyl content and viscosity of the starting material as in the current invention (compare claim 1,8) as well as the presence of organic solvents as in the current invention (compare claim 8a).

Savage (US 3,728,331) teach a process for reducing the viscosity of a cellulose ether (abstract). Savage specifically teaches the process for ethyl cellulose (column 2 line 19) and teaches depolymerization (column 2 line 49). Savage teach the addition of hydrogen peroxide followed by packaging (column 3 line 66-68) with no intermediate neutralization step. Since Schulz (discussed above) teach a related process for reducing viscosity one would be motivated to combine with the teachings of Savage. In particular, one would be motivated to

optimize the process to reduce the cost of the process by reducing the number of steps and materials needed. As such one would package the ethylcellulose without a neutralization step as described by Savage thus meeting the limitations of claims 6,14-15 of the instant invention. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

It has been recently held that "Neither §103's enactment nor *Graham*'s analysis disturbed the Court's earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art." KSR v. Teleflex, 550 U.S. ___, 82 USPQ2d 1385, 1389 (2007). The KSR court stated that "a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR at 1389. In the instant case, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods and the combination would have yielded predictable results.

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In the instant case all the claimed elements (ethylcellulose and packaging of ethylcellulose) were known in the art as discussed above and one skilled in the art could have combined the elements by known methods and the combination would have yielded predictable

results. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Section 2111.04 of the MPEP states:

> Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:
> (A) " adapted to " or "adapted for " clauses;
> (B) " wherein " clauses; and
> (C) " whereby " clauses.
> The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case.

In the instant case, claims 2 and 7 recite wherein clauses about the product produced. It is noted that claim 7 also recites limitations about the starting material, however the range of viscosities is within the ranges cited above. Since the wherein clause does not result in an additional step or require steps to be performed the claim limitations are met from the above cited references.

Claims 1-8,14-15 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10-20 of U.S. Patent No. 6,294,008 ('008) in view of Schulz (US 6,261,218), Keary (US 6,294,008), Pyle (US 2,711,965), and Savage (US 3,728,331).

'008 teach a process for making a cellulose ether composition comprising etherifying and depolymerizing with hydrogen chloride (claim 10). '008 specifically teach hydrogen chloride at 0.10 to about 0.19 weight percent.

'008 does not expressly teach the ethoxyl content and viscosity of the starting material of claim 1, packaging as in claim 6, HCl weight percent as in claim 5, or the presence of an organic solvent with the ethyl chloride as in claim 8.

One would have been motivated to combine '008 with the work of Schulz since both teach the making of cellulose ethers. Schulz (US 6,261,218) teach a process for making a cellulose ether (abstract). In particular, ethylcellulose (column 6 line 38) is a cellulose ether of the invention. Schulz teach depolymerization of the cellulose ether specifically via the gaseous acid hydrogen chloride (claim 9) (compare claim 1,3 of the current invention). Schulz teach the process in the presence of water, specifically at least 0.5 weight percent and no more than 5.0 weight percent (claims 2,4) (compare claim 4 of the current invention). Schulz teach that a low molecular weight cellulose ether is formed such that a two percent aqueous solution has a viscosity preferably about 1 to about 100 cP at 20C (1cP = 1mPa•s) (column 4 line 32-37). Schulz teach the process including etherification of the alkalized cellulose and depolymerization (abstract). Specifically, Schulz teach an etherification reaction with ethyl chloride (column 3 lines 44-50) and depolymerization with gaseous hydrogen halide (column 4 lines 51-57) (compare claim 8 of the current invention).

It would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g.ethoxyl content, viscosity, HCl weight percent), because such conditions are art-recognized result-effective variables that are routinely

determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). *See* MPEP § 2145.05).

In the instant case, the prior art teaches related processes within the range of the instant invention.

Keary (US 6,294,008) teach cellulose ether compositions having low molecular weight and processes of making (abstract). Keary specifically teach the depolymerization of cellulose ether (column 1 line 61-65, claim 10) such that the viscosity is 200 cP or less by using hydrogen chloride. Keary specifically teach that the hydrogen chloride be present at 0.10 to about 0.19 weight percent (claim 20). Therefore Keary teach a similar process with specific hydrogen chloride ranges as in the instant invention (compare claim 5).

It is noted that Keary (column 2 line 44-47) and Schulz (column 2 line 22-24) test viscosity of 2% solution which is different than the conditions of the composition of the claimed invention (a 5% solution). Please note, since the Office does not have the facilities for examining and comparing Applicants' composition with the composition of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. *See In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980), and "as a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Pyle (US 2;711,965) teach the treatment of cellulose ethers (first paragraph). Pyle specifically describe cellulose ethers that are organic solvent-soluble in common organic solvents (column 4 line 14-18). Pyle goes on to describe an ethycellulose having an ethoxyl content preferably between about 43% and about 48% and a viscosity of at least 20cps (column 4 lines 24-27). In example 1, Pyle teach ethylcellulose having 46.5% ethoxyl content dissolved in a toluene-alcohol organic solvent which has a viscosity of 97 cps. Therefore Pyle teach a similar process with specific ethoxyl content and viscosity of the starting material as in the current invention (compare claim 1,8) as well as the presence of organic solvents as in the current invention (compare claim 8a).

Savage (US 3,728,331) teach a process for reducing the viscosity of a cellulose ether (abstract). Savage specifically teaches the process for ethyl cellulose (column 2 line 19) and teaches depolymerization (column 2 line 49). Savage teach the addition of hydrogen peroxide followed by packaging (column 3 line 66-68) with no intermediate neutralization step. Since Schulz (discussed above) teach a related process for reducing viscosity one would be motivated to combine with the teachings of Savage. In particular, one would be motivated to optimize the process to reduce the cost of the process by reducing the number of steps and materials needed. As such one would package the ethylcellulose without a neutralization step as described by Savage thus meeting the limitations of claims 6,14-15 of the instant invention. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

It has been recently held that "Neither §103's enactment nor *Graham*'s analysis disturbed the Court's earlier instructions concerning the need for caution in granting a patent based on the

combination of elements found in the prior art." KSR v. Teleflex, 550 U.S. ___, 82 USPQ2d 1385, 1389 (2007). The KSR court stated that "a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR at 1389. In the instant case, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods and the combination would have yielded predictable results.

Furthermore, The KSR court concluded that "obvious to try" may be an appropriate test under 103. The Supreme Court stated in *KSR*

> When there is motivation
>
> > "to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, ___, 82 USPQ2d 1385, 1397 (2007).

In the instant case all the claimed elements (ethylcellulose and packaging of ethylcellulose) were known in the art as discussed above and one skilled in the art could have combined the elements by known methods and the combination would have yielded predictable results. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Section 2111.04 of the MPEP states:

> Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:

(A) " adapted to " or "adapted for " clauses;
(B) " wherein " clauses; and
(C) " whereby " clauses.
The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case.

In the instant case, claims 2 and 7 recite wherein clauses about the product produced. It is noted that claim 7 also recites limitations about the starting material, however the range of viscosities is within the ranges cited above. Since the wherein clause does not result in an additional step or require steps to be performed the claim limitations are met from the above cited references.

Claims 1-8,14-15 directed to an invention not patentably distinct from the claims of commonly assigned U.S. Patent No. 6,306,333; U.S. Patent No. 6,261,218; U.S. Patent No. 6,294,008 as discussed above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 6,306,333; U.S. Patent No. 6,261,218; U.S. Patent No. 6,294,008, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

The examiner has identified three Patents which have required a rejection under Double Patenting above. Because of Applicant's prolific Patent and Application portfolio, the burden is shifted to Applicant to identify all relevant Applications and Patents and to include said Applications and Patents on any terminal disclaimer filed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald T. Niebauer whose telephone number is 571-270-3059. The examiner can normally be reached on Monday-Thursday, 7:30am-5:00pm, alt. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER